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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,363	03/27/2007	Hitoshi Tamai	20162.0016USWO	9226
52835 7590 08/05/2009 HAMRE, SCHUMANN, MUELLER & LARSON, P.C. P.O. BOX 2902 MINNEAPOLIS, MN 55402-0902				
EXAMINER				
COLLINS, ALVIN				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/588,363

**Applicant(s)**

TAMAI ET AL.

**Examiner**

Alvin C. Collins III

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12/6/06 IDS.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 12/6/06, 11/6/06, 8/3/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Specification*

1. Claims 4, 6, 7, 10-13, and 19-25 are objected to because of the following informalities: The claims include the phrase "any one of," which was not removed in the preliminary amendment to remove improper multiple dependencies. Appropriate correction is required.
2. Claim 19 is objected to because of the following informalities: "co ntaining" on line 9 and "t he" on line 10 of the claim are deemed a typographical error. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 2 provides for the use of the curable composition, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 2 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and */Kuo-Liang Peng/*

Primary Examiner, Art Unit 1796 *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966)

4. Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear if the "curable composition" and the "layer having photocatalytic activity-due antistaining properties" is one in the same. Clarification is requested.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-14 and 19-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Kanamori et al. WO02/085985 translation provided by US Patent 7,297,743 B2 .

Regarding claims 1, 6, and 7, Kanamori teaches a curable composition comprising a vinyl polymer having reactive silicon containing group (a), a polyoxyalkylene polymer having a reactive silicon containing group, and a plasticizer having an acrylic component (c) (see col. 3, lines 55-63). The reactive silicon containing group is represented by the formula (1) of Kanamori where X represents a hydroxyl or hydrolysable group and R<sup>2</sup> is a substitute or unsubstituted univalent organic group containing 1-20 carbons, which reads on the vinyl polymer which contains at least one crosslinkable silyl group. The vinyl polymer has a main chain that is obtained from

the living radical polymerization technique (col. 5, line 65 to col. 6, line 11). Regarding the antioxidant, examples 1, 4, and 10, the composition further comprises the UV absorber Tinuvin 327, a hindered phenol compound, which reads on the composition as claimed (see col. 25 line 50 to col. 26 line 21).

Regarding claims 2 and 3, Kanamori teaches the curable composition has applications in the field of buildings and adheres to glass, ceramics, wood, metals, and shaped resin articles (see col. 23, lines 6-16).

Regarding claims 4 and 5, Kanamori teaches a number of additives to the curable composition, which includes photocurable resins such as polyfunctional acrylic resins. These resins are known for their self-cleaning properties (see col. 22, lines 15-29). Example 4 has titanium dioxide, which is photocatalytic (see col. 6 line 45 – col. 7 line 4). The composition further comprises calcium carbonate (hydrophilic material), which reads on the curable composition of claim 5.

Regarding claims 8 and 9, Kanamori teaches the curable composition including a plasticizer component which includes phthalic esters and esters of polyalkylene glycols (polyoxyalkylene polymer), preferably of phthalic esters and polyethers (see col. 19, lines 32-40 and 62-65).

Regarding claim 10, Kanamori teaches the curable composition where the vinyl polymer is produced by the living radical polymerization technique with a molecular weight distribution of less than 1.8 (col. 6, lines 6-9 and col. 12, lines 5-8).

Regarding claims 11-14, Kanamori teaches the curable composition the monomer for the vinyl polymer is preferable acrylate and/or methacrylate monomers, which would result in an acrylic or methacrylic ester polymer, respectively (see col. 4 lines 25-30).

Regarding claim 19, Kanamori teaches the curable composition including a vinyl polymer with a reactive silicone group represented by the formula below (col. 4, line 50 - col. 5, line 10). This formula mirrors the crosslinkable silyl group of the vinyl polymer in that  $R^1$  and  $R^2$ , which may be the same or different, correspond to  $R^{10}$  and  $R^{11}$  of the instant claim, and is a triorganosiloxy group and  $X$  corresponds to  $Y$  of the instant claims and is a hydroxyl or hydrolysable group, which may be the same or different. Both the reference and instant claim offer the provision of  $R^1$  and  $R^2$  being alkyl groups containing 1-20 carbons.



The subscripts **a** and **b**, correspond to the subscripts b and a, respectively of the instant claim. The values for **a** may be 0, 1, or 2 and **b** is 0, 1, 2, or 3, provided the values of the sum of a's + b is greater than or equal to 1 (see col. 4, line 50 - col. 5, line 10).

Regarding claim 21, Kanamori describes in Example of Synthesis-2, the making of an silyl-terminated poly(propylene oxide) polymer, which is subsequently blended with vinyl polymer with hydrolysable silyl groups prepared from synthesis example 1 in a 70/30 weight ratio (~233%). This reads on the claimed range of 0.1 to 1,000 parts by weight per 100 parts by weight of the vinyl polymer (0.1 – 1000%).

Regarding claim 22, Kanamori describes in Example of Synthesis-2, the making of an silyl-terminated poly(propylene oxide) polymer, which is subsequently blended with vinyl polymer with hydrolysable silyl groups prepared from synthesis example 1 in a 70/30 weight ratio (~233%). This reads on the claimed range of 3 to 300 parts by weight per 100 parts by weight of the vinyl polymer (3 – 300%).

Regarding claim 23, Kanamori teaches in Example 1 the curable composition comprising 3 weight parts of stannous octanoate (tin curing catalyst) and 100 weight parts of the polymer (A) (vinyl polymer).

Regarding claims 24 and 25, Kanamori teaches the curable compositions may be used as a sealant or adhesive (see col. 7, lines 15-21).

6. Claims 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Kanamori et al. WO02/085985 translation provided by US Patent 7,297,743 B2 as evidenced by Japanese Publication JP 2000178456 translation provided by US Patent 7,081,494.

Regarding claims 15-18, the primary reference teaches the curable composition as described previously in paragraph 5. Furthermore, Japanese Publication 2000-178456 with US equivalent 7,081,494 teaches the method of producing a vinyl polymer by the atom transfer radical polymerization technique (see col. 7, lines 28-49). Publication '494 also teaches the curable composition wherein a transition metal complex of copper is preferred among polymerization catalysts (see col. 15, lines 10-20). This reads on the curable compositions of claims 15-18.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,855,780 B1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alvin C. Collins III whose telephone number is (571) 270-7734. The examiner can normally be reached on Monday through Thursday, 7:30 am - 5:00 pm EST and on alternate Fridays from 7:30 am - 4:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone



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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AC/

/Kuo-Liang Peng/

Primary Examiner, Art Unit 1796